

Flight Report – SEAC4RS ER-2, September 16, 2013

Prepared by: Richard Ferrare (richard.a.ferrare@nasa.gov)

Purpose of flight: The science goals for this flight were to: 1) acquire remote sensing data over cirrus, 2) transit far south to acquire in situ trace gas measurements associated with colder temperatures and observe aging of air, 3) observe sub-visual cirrus, 4) measure outflow from TS Ingrid, 5) perform MMS calibration maneuvers.

Pilot: Stu Broce

Takeoff: 9:55 CDT

Duration: 8.0 hours

Notes:

The ER-2 flew first SE over the Gulf over clear skies on the way southeast toward the Caribbean. At a latitude of about 23 deg, the ER-2 headed southeast along the 900 km leg designed for the remote sensors to observe cirrus and convective clouds. This leg went just east of the Yucatan Peninsula and east of Honduras. There were extensive clouds along this leg and CPL observed extensive cirrus clouds. However, the CPL measurements did not give an indication of subvisual cirrus along this leg. After reaching the end of this leg at a latitude of about 15.5 deg, the ER-2 reversed course and flew NNW. Along this course the aircraft performed two dips; the first dip went down to about 43 kft but could not go lower because of ATC directions. The second dip went down to about 40 kft. In both dips there were slight (2 min) delays at about 50 kft. At a latitude of about 23 deg, the ER-2 then flew west toward TS Ingrid and performed another dip to about 40 kft. At the end of this westbound leg, the ER-2 performed a 150 km level leg run designed for AirMSPI sensing. The ER-2 then turned north and flew back toward Ellington. Along the way, the ER-2 made a final dip down to about 43 kft. On the descent into Ellington, the ER-2 performed full MMS maneuvers at 62 kft and 52 kft.

Aircraft and instruments: All instruments appear to have worked nominally as far as limited in-flight and quick-look analyses showed. All instruments are ready for the next flight.

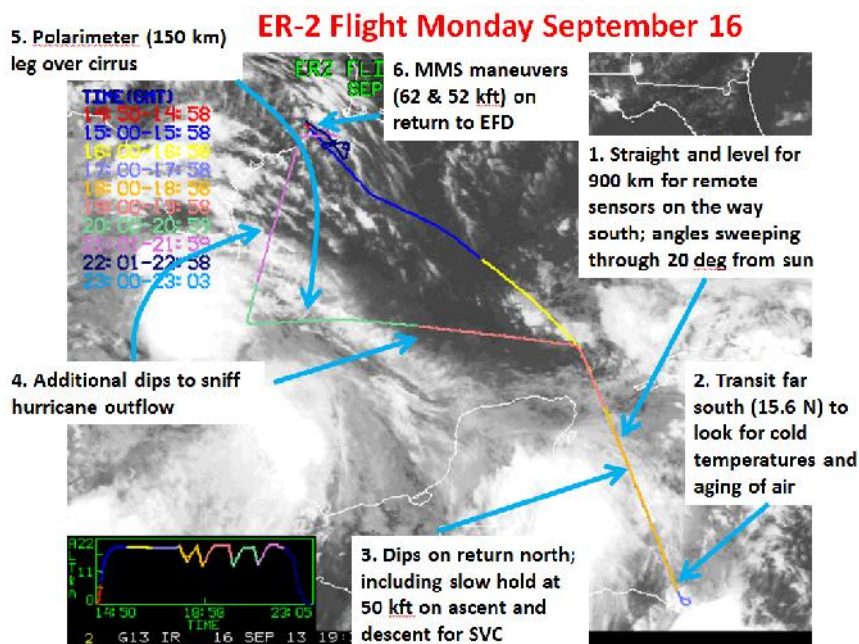


Figure 1. Flight track of ER-2 from September 16 overlaid on GOES image.